



Mirabilis viscosa (Nyctaginaceae) – Newly recorded for Asia, as a naturalised plant

K.K. Sampath Kumara*, A.N. Sringeswara¹, K.B. Sadananda², G.R. Shivamurthy² and H.S. Prakash

Department of Studies in Biotechnology, University of Mysore, Manasagangotri, Mysore – 570 006, Karnataka, India.

¹Department of Forestry & Environmental Science, University of Agricultural Sciences, GKVK Campus, Bengaluru – 560 065, Karnataka, India.

²Department of Studies in Botany, University of Mysore, Manasagangotri, Mysore – 570 006, Karnataka, India.

*E-mail: sampathsringeri@yahoo.com

Abstract

While preparing an inventory of the flowering plants of Mysore city, Karnataka, India, the authors have collected *Mirabilis viscosa* Cav., a naturalised weed bearing colourful flowers. This naturalised exotic is reported here as a new record for Asia.

Keywords: Asia, Exotic, *Mirabilis viscosa*, Mysore, Weed

Introduction

During botanical explorations in Mysore, Karnataka, India, the authors have collected an exotic weed bearing colourful flowers, which has been identified as *Mirabilis viscosa* Cav. (Nyctaginaceae). It grows gregariously in waste ground and on debris heaps in and around Mysore city. A native of Mexico, Peru, Colombia and Ecuador, it was first cultivated in Madrid, Spain from Peruvian seed (Cavanilles, 1791).

From Spain it was introduced to cultivation in Britain, where it was illustrated by William Curtis in the *Botanical Magazine* under the common name 'viscid umbrella-wort', a name based on its characteristic fruit: 'the calyx closes on the germen [seed], enlarges, droops, and becomes deeply plaited; on the ripening of the seed it turns brown, expands, and is suspended like a little umbrella over the seed' (Curtis, 1799).

Curtis transferred Cavanilles's original name *Mirabilis viscosa* to the genus *Oxybaphus* but as this generic name of L'Héritier had not at that point been validly published, Curtis's name is illegitimate. There has been much discussion over the generic delimitation of *Mirabilis*, an almost entirely (but see below) New World genus of some 60 species (Le Duc, 1995), but most authors now follow the suggestion of Heimerl (1934) and treat

the genus in a wide sense recognising sections, of which *Oxybaphus* is one. It differs from *Mirabilis* s. str. in having a calyx that is accrescent and papery in fruit, and usually 3 stamens (though Cavanilles's original description of *M. viscosa* allowed for 3 or 4). The genus *Mirabilis* s.l. is from New World with the striking exception of *Oxybaphus himalaicus* described in 1846 by Edgeworth from the Himalaya ('in valle flum[en] Dhauli', probably the Dhauli River in the extreme east of what is now Uttarakhand).

It would be interesting to investigate this striking disjunction using molecular techniques. Although *Mirabilis himalaica* (Edgew.) Heimerl occurs in weedy habitats in India (Uttarakhand), Nepal, Bhutan and China (Gansu, Shaanxi, Sichuan, Xizang, Yunnan) (Sutton, 1982; Grierson & Long, 1984; Lu & Gilbert, 2003), the date of its first discovery suggests that it is not a post-Columbian anthropogenic introduction.

Although Edgeworth commented on his plant's similarity to the Mexican *O. cervantesii* Lag. ex Choisy, Choisy (1849) pointed out its very close similarity to *O. viscosus*, and in fact the Mysore plant was first recorded under the name *O. himalaicus* (Rao & Razi, 1975). The two species may be distinguished as follows:

1. Flowers large; bracteoles conspicuous; pedicels short; calyx accrescent in fruits; stamens 3 (or 4), declinate, long-exserted; fruits (anthocarps) with five verrucose ribs ***M. viscosa***
1. Flowers small; bracteoles inconspicuous; pedicels long; calyx scarcely accrescent in fruits; stamens (4 or) 5, short-exserted; fruits (anthocarps) smooth ***M. himalaica***

Mirabilis viscosa Cav., Icon. 1: 13, t. 19. 1791. *Oxybaphus viscosus* (Cav.) L'Hér. ex Choisy in DC., Prodr. 13: 430. 1849. *Mirabilis himalaica* sensu R.R. Rao & Razi, Geobios 2(6): 196. 1975, non (Edgew.) Heimerl 1932.

Herbs, annual or short-lived perennial, erect, branched, to 2 m high, glandular viscid-pubescent. Stems terete, articulated, slightly thickened and brittle at nodes. Leaves unequal in opposite pairs, ovate, 3 – 12 × 1 – 8 cm, cordate and slightly unequal at base, acute to obtuse at apex; petioles 1 – 5 cm long. Inflorescences a cymose panicle, terminal. Flowers involucrate, opening in the morning; pedicels c. 2 mm long. Involucres 5-lobed, viscid outside, 1-flowered, accrescent, campanulate up to anthesis, inflated and 5-winged in fruit, spreads and dries into an umbrella-shaped, translucent, golden-brown, reticulate, papery structure at maturity, to 2 cm in diam. Perianth to 1.5 cm long, pinkish, fugacious; tube short, constricted above the ovary and expanded to form a 5-lobed, trumpet-shaped limb at apex; limb to 2 cm across. Stamens 3, exserted; filaments unequal, to 1.5 cm long, pinkish; anthers dorsifixed, yellowish, 2-loculed, longitudinally dehiscing; pollen grains spherical, to 150 µm. Ovary 1-loculed, 1-ovuled; style pinkish, exserted beyond stamens; stigma capitate with obscurely triradiate lobes, granular, pale pinkish. Fruits to 3 mm long, enclosed in persistent involucre, club-shaped, 5-ribbed, greyish brown, verrucose; verrucae on the ridges prominent and sparse in the grooves.

Flowering & Fruiting: Throughout the year, especially during the winter season.

Habitat: Waste ground and on debris heaps.

Distribution: Colombia, Ecuador, Mexico and Peru; introduced and naturalised in India (Mysore, Karnataka).

Specimen examined: INDIA, **Karnataka**, Foothills of Chamundi, Mysore city, 11.11.2007, K.K. Sampath Kumara, K.B. Sadananda & G.R. Shivamurthy CHF 1051 (MH and Botany Department Herbarium, Manasagangotri, Mysore).

Conclusion

Mirabilis viscosa must presumably have been introduced to Mysore city as a garden plant for its showy ornamental flowers and have escaped from cultivation. However, the source of introduction is not known. The plant is by no means common in cultivation (e.g. there are no cultivated or introduced specimens in the Edinburgh herbarium (E)). Although the plant is listed in horticultural dictionaries for North America (Everett, 1981) and Britain (Huxley, 1992), it is included neither in the authoritative *European Garden Flora* (King, 1989) nor in the *Tropical Garden Flora* (Staples & Herbst, 2005) or any of the editions of A.B. Graf's illustrated *Exotica* or *Tropica*. Nineteenth-century Indian gardening books and garden catalogues (including those of the Madras Agri-Horticultural Society, Chennai and the Lal Bagh, Bengaluru) have been consulted, but the plant appears in only a single such work – J.O. Voigt's *Hortus Suburbanus Calcuttensis* of 1845, showing that the plant was cultivated in Bengal in the early nineteenth century.

There are no records of the plant occurring as a naturalised escape either in Europe, the USA or elsewhere in India. As noted above, the plant was first reported for Mysore in 1975 under the name *Oxybaphus himalaicus*; curiously the same authors did not include this record in their Flora of Mysore (Rao & Razi, 1981) in which they did discuss several other weedy exotics. One of these, the composite *Chromolaena odorata*, also from Central America, they speculated to have been introduced within the previous two decades via Assam and Kerala, and given its history of cultivation in Bengal, but absence from southern India in historical times, the present plant could perhaps recently have followed a similar route.

Mirabilis viscosa now grows gregariously in and around Mysore city and shows signs of suppressing the growth of other plants. Climatic conditions here seem to be favourable for this plant as it flowers throughout the year. A close watch should be kept to monitor its invasiveness. If it spreads to neighbouring areas, it could pose a threat to indigenous plant species. However, the plant has not so far been recorded as an invasive weed, though its name is on the Global Register of Weeds (http://www.hear.org/gcw/species/mirabilis_viscosa/ accessed 7 May 2012), based on a single Mexican source. In the only recent floristic treatment available for Mexico (Spellenberg, 2001), the author comments that due to its frequency in disturbed places, the plant is not likely to be vulnerable to extinction, but made no comment on any invasive tendencies.

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